



Solution Development Life Cycle (SLC)
Solution Acquisition Planning
Deployment Plan

August 31, 2001

Table of Contents

Table of Contents	2
1.0 Introduction	3
2.0 Objective.....	3
3.0 Communications	3
4.0 Piloted “Coaching Session” Approaches.....	4
4.1 SAP High Level Overview.....	4
4.2 Detailed Coaching Session.....	6
4.2.1 Questions for Participants and Average Response Rate	6
4.2.2 Analysis of Coaching Sessions	7
4.3 SAP Pilot Activities.....	7
4.3.1 Financial Partners’ Data Mart.....	7
4.3.2 eServicing.....	8
4.3.3 Consistent Answers	9
5.0 Recommended Approach Moving Forward	10
5.1 High-Level Overview	10
5.2 Coaching Sessions.....	10
6.0 Impacts, Results and Outcomes	11
6.1 What we are trying to accomplish... ..	11
6.1.1 Compliance with Federal Legislation.....	11
6.1.2 Expected Benefits	11
6.2 Impacts	11
6.3 Results.....	11
6.4 Desired Outcomes.....	12
6.5 Measure Effectiveness	12
7.0 Critical Success Factors.....	13
8.0 Open Points/Potential Risks	13

1.0 Introduction

Student Financial Assistance (SFA) has set forth in developing a Solution Acquisition Lifecycle (SLC) to serve as a framework intended to guide a Solution Acquisition from business need to deployment and support. The SLC provides defined, repeatable and efficient processes that Solution Acquisition project managers may tailor to meet their individual needs. The SLC is further enhanced by SFA's Solution Acquisition Capability Maturity Model (CMM) to increase its organizational efficiency. CMM identifies Key Process Areas (KPAs) that organizations should focus their efforts on to improve Solution Acquisition efficiency. SFA has selected KPAs from 2 of the Software Engineering Institute's (SEI's) CMM's – Software Acquisition CMM and Software CMM. SFA has taken the most applicable, proven best practices and applied them to its way of doing business to create the SLC Process Framework.

Six Key Processes Areas have been chosen to improve SFA's business approach and better position SFA to achieve its three performance objectives of: 1) Increasing customer satisfaction, 2) Increasing employee satisfaction and 3) Reducing unit cost.

Solution Acquisition Planning was one of six KPAs chosen to enable the organization to accurately plan and document its acquisition efforts. This deployment highlights results of the completed effort and ongoing activities surrounding the discipline of SAP and its acceptance across SFA.

2.0 Objective

The Solution Acquisition Planning (SAP) Deployment enables the socialization and institutionalization of the processes and tools associated with this Key Process Area. The Deployment Plan assists in transitioning the SAP process and related work products from their current, developed stage to an implemented, accepted discipline throughout Student Financial Assistance and finally, to a continued maintenance phase.

The initial SAP pilot deployment activities have occurred. These "pilot" activities validated the approach as well as the content to be used for the purpose of deploying SAP to SFA and the Modernization Partner. This report details: the "piloted" approach, recommended modifications and suggestions for improvement to the deployment effort.

3.0 Communications

Various communications were developed and disbursed to support the deployment effort for the Solution Acquisition Planning KPA. An SFA *InStep* article was developed to begin an overall awareness and announce to the SFA community that the SLC/CMM initiative was underway. This article gave a brief synopsis of the Capability Maturity Model, the intent of the effort and the parties involved.

Additional Communications were distributed to targeted audiences on an as-needed basis. These distributions included briefing presentations and training invites and reminders. This communication practice should be continued throughout the SAP deployment effort.

4.0 Piloted “Coaching Session” Approaches

To achieve a maximum level of acceptance across SFA, it is recommended that Solution Acquisition Planning be deployed in a phased approach based on the point of need for a particular acquisition effort or project. This timely approach will emphasize the relevance and benefits of the SAP process and tools because it will be related to current project activities. In addition, minimal time will elapse between training and utilization.

“Pilot” deployment activities were executed to test and validate the efficiency and potential success of the selected methods. The deployment activities are detailed below.

4.1 SAP High Level Overview

The first activity in “pilot” deployment of SAP was the creation and conduct of a high level, 90 minute overview of the Solution Acquisition Planning KPA and how it is integrated into the Solution Lifecycle (SLC). The content addressed:

- A brief description of the Solution Lifecycle
- SFA’s Solution Acquisition Capability Maturity Model
- How SAP was integrated into the SLC framework
- What Solution Acquisition Planning means to SFA
- How SAP will be applied
- An introduction to the tools associated with the SAP process

The intended audience was select members of eCAD, the Decision Support Group (DSG), and SFA Project Managers for FY02. Attendee selection was based upon the relevance of the material to them at the current time. Two 90-minute sessions were held on Thursday, August 23, 2001. Of the approximately 21 SFA resources responding to attend the session, 13 participated with members of eCAD and the Schools Channel comprising the majority of the audience.

The session was very well received. Satisfaction survey results conveyed that the session addressed the appropriate information and that they gained an increased understanding of the SLC, SAP and the tool associated with this process. Most were optimistic that the enhancements provided through SAP would help to provide information that will allow for better system acquisition planning.

A brief synopsis of the feedback is listed on the next page (survey questions and average response rates) with more detail provided in *Appendix A* of this report.

4.1.1 Questions for Participants and Average Response Rates

Based on the feedback of the 11 session participants completing the survey, average response rates were captured and are displayed to the right of each question. Respondents were asked to answer the questions using a 5-point scale (1 being Low and 5 being High).

A) prior - How well did you understand System Acquisition Planning prior to this course? (3.5)

B) How well do you understand :

1. The Solution Acquisition Plan as it follows the Solution Life Cycle (SLC)? (4.33)
2. The importance of estimating planning time for a Solution Acquisition? (4.66)
3. How to populate a Solution Acquisition Estimating Worksheet? (4.08)
4. The different activities in the System Acquisition Estimating Worksheet, such as the business case? (4.0)
5. The allocation of Roles and Responsibilities in the planning effort? (4.33)
6. The Solution Acquisition Plan as a project management tool? (4.54)
7. How effective do you feel the System Acquisition Estimating Worksheet Tool is? (4.58)
8. How effective do you feel the IT Business Case Cost Estimating Template is? (4.41)
9. How comfortable do you feel using the System Acquisition Plan Template? (3.66)
10. Overall your understanding of the Solution Acquisition Plan is: (4.16)
11. The course and discussion activities were: (3.91)
12. Overall, how useful was this coaching session? (4.33)

Graphical Depiction of Average Response for High-level Session (*also shown above*)

Question #	A	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
Average Response	3.5	4.33	4.66	4.08	4.0	4.33	4.54	4.58	4.41	3.66	4.16	3.91	4.33

4.1.2 Analysis of Survey Results

Conclusions drawn from the survey response rates received include:

- The first question (noted as “prior”), establishes a benchmark for the beginning point of the class. It determines the participants’ existing knowledge of the Solution Acquisition Planning process, as it exists within SFA – prior to the deployment effort (a low to medium rate was expected).
- The significant increase between the “prior” question and question 12 demonstrates the High-level session achieved its expected outcomes. Participants gained a more thorough understanding and awareness of SAP, the workproducts associated with the process and how it integrates into the SLC.
- Question 2 shows a high success rate of coaching participants on the value of estimating planning time for a solution acquisition. This is a new discipline for many SFA resources.
- A lower average in Question 9 emphasizes the need for additional tool training (addressed in the detailed coaching).
- The response rates for questions 4 and 9 (understanding of the tools) demonstrate the need for some form of coaching on tool utilization.

- The average score for Question 11 can use improvement. One basic corrective action would be the inclusion of more discussion time in the session. Participants were eager to ask questions and express individual points of view and yet this was hindered due to tight time constraints.

4.2 Detailed Coaching Session

Following the *High Level Overview Session of SAP*, a detailed, goal based scenario, session was held with the expectation of providing participants with more extensive knowledge of the Solution Acquisition Planning tools. This session offered participants the opportunity to complete portions of the enhance tools in a safe, risk-free environment (via scenarios).

Participants for this session were intended to be members of the SFA organization actively involved in acquiring a new solution. Participation in this session was low (25 people invited, 12 responded to attend, 4 people attended). Having so few participants in the session minimized the deployment team's ability to gather feedback and suggestions regarding the session conduct and content. An average response rate is provided below with more detail contained within Appendix B of this report. The improvement suggestions made were then incorporated into the finalized deployment approach.

4.2.1 Questions for Participants and Average Response Rate

Based on the feedback of the 4 session participants completing the survey, average response rates were captured and are displayed to the right of each question. Respondents were asked to answer the questions using a 5-point scale (1 being Low and 5 being High).

A) prior - How well did you understand System Acquisition Planning prior to this course? (3.25)

B) How well do you understand :

1. The Solution Acquisition Plan as it follows the Solution Life Cycle (SLC)? (4.0)
2. The importance of estimating planning time for a Solution Acquisition? (4.25)
3. How to populate a Solution Acquisition Estimating Worksheet? (3.75)
4. The different activities in the System Acquisition Estimating Worksheet, such as the business case? (4.5)
5. The allocation of Roles and Responsibilities in the planning effort? (4.5)
6. The Solution Acquisition Plan as a project management tool? (4.5)
7. How effective do you feel the System Acquisition Estimating Worksheet Tool is? (4.25)
8. How effective do you feel the IT Business Case Cost Estimating Template is? (4.75)
9. How comfortable do you feel using the System Acquisition Plan Template? (4.00)
10. Overall your understanding of the Solution Acquisition Plan is: (4.0)
11. The course and discussion activities were: (4.25)
12. Overall, how useful was this coaching session? (4.25)

Graphical Depiction of Average Response for Detailed Session (*also shown above*)

Question #	A	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
Average Response	3.25	4.0	4.25	3.75	4.5	4.5	4.5	4.25	4.75	4.0	4.0	4.25	4.25

4.2.2 Analysis of Coaching Sessions

Conclusions drawn from the survey responses rates received include:

- As in the High-level session, achievement of the course objective is demonstrated by the improvement in response rates between QA and Q12. These 2 questions compare participant understanding of SAP before and after the session.
- The lower ratings obtained in the detailed session (eg: questions 2 and 10) support the necessity for the High-level overview prior to training on the individual tools. Three of the 4 participants in the detailed session did not attend the High-level Overview; therefore the “big picture” context was not adequately understood. Positioning the high level overview as a prerequisite to tool training will address these “context-setting” needs and accomplish the appropriate balance of information transfer.

4.3 SAP Pilot Activities

Three Pilot/Briefing Sessions were held with Modernization Partner Task Order managers to test and collect feedback regarding the SAP tools. The selected projects, Financial Partners Data Mart, eServicing and Consistent Answers encompass the traditional, Modernization fixed price task order as well as value-based deals. High-level comments are included below but more detail can be found in *Appendix C*.

4.3.1 Financial Partners' Data Mart

4.3.1.1 Materials Reviewed

1. Acquisition Planning Estimating Worksheet
2. Solution Acquisition Plan
3. IT Cost Estimating Tool

4.3.1.2 Lessons Learned

1. Acquisition Planning Estimating Worksheet:
 - Credible estimate to the pre-work time and effort
 - ITRs, or whoever may be developing the business case, to consider all of the steps in the planning process and display the time and effort associated with each step
 - TO manager determined 24 days of planning effort. Without completing the worksheet, the estimate would have been significantly lower
 - Recommendation was made to include definitions, within the tool, to distinguish between high-level requirements development and business case research. Worksheet terminology was somewhat confusing

2. Solution Acquisition Plan:

- Viewed as a beneficial tool for SFA Project Managers
- Will assist project managers in addressing the individual aspects of the solution acquisition and possibly help to better address issues as related to the components
- Questioned the level of detail of the plan and whether or not completing the plan would actually be a productive activity for SFA project managers

3. IT Cost Estimating Tool:

- a. Preferred the option of a separate column to enter own days for all activities as was feasible in earlier iterations of the tool
- b. Stated that the ability to include experience-based numbers should be an option
- c. Calculated the cost of the FP Data Mart using the tool. The tool projected double the dollar amount initially estimated

General Comment: Job-aids were not widely referenced

4.3.2 eServicing

4.3.2.1 Materials Reviewed

1. Acquisition Planning Estimating Worksheet

2. Solution Acquisition Plan

4.3.2.2 Lessons Learned

1. Acquisition Planning Estimating Worksheet:

- Tool was useful for both SFA and Modernization Partner; especially, if completed jointly
- Planning sections for discussions/negotiations with hardware/software vendors and legacy systems be added to sheet

2. Solution Acquisition Plan:

- Considers all aspects of the acquisition process
- May be premature to complete this document prior to the business case or even the start of the project
- While in the process of the project, the plan helped in the documentation of many issues
- Describing the constraints at the detail level contained in the plan, rather than the level in which the current tools display the issues is a benefit. Oftentimes, constraints are not currently planned for or documented in enough detail resulting in an unreasonable time expectations for resolutions
- Supported the Resource, Scheduling, and Interdependencies issue coverage as they appear in the plan

4.3.3 Consistent Answers

4.3.3.1 Materials Reviewed by James Laychak and Michael Kinfu:

1. Acquisition Planning Estimating Worksheet
2. Solution Acquisition Plan
3. IT Cost Estimating Tool

4.3.3.2 Lessons Learned

The overall lesson of this pilot/briefing session was the point that Shared-in- Savings planning is significantly different than Firm-Fixed Price planning. This differential will require additional attention as Acquisition Planning is deployed and SFA acquisition process continues to mature.

1. Acquisition Planning Estimating Worksheet
 - Acquisition Planning Estimating Worksheet would be useful for what Share-in-Savings projects consider the “Visioning” phase
 - Tool would ensure the project was planning their time and getting paid appropriately for the effort
 - Worksheet really gives managers an idea of when the activities planning activities take place and felt that within Shared-in-Savings deals this would apply to the original business case and TO development effort
- Solution Acquisition Plan:
 - Tool was useful in demonstrating where and why project managers are spending their money
 - Wording of the document to be “foreign” to Shared-in-Savings projects (Shared-in-Savings efforts often follow a modified process containing different terminology)
 - Budget and cost sections were not applicable to Shared-in-Savings deals but that Milestones, technology, risks, constraints, and following SFA standards should be emphasized throughout the plan
 - Tool should remain flexible as it is utilized to manage expectations and oversee project activities
 - Rename the tool a “Solution Delivery Plan or a Solution Expectation Plan”

5.0 Recommended Approach Moving Forward

To effectively transition the Solution Acquisition Planning process and tools from the Construction to the Deployment and finally the Support phases, it is recommended that the High-level overview and a modified, team based coaching session, focused on tool use, serve as the main deployment activities. To successfully implement this approach, 1 or 2 SFA resources should be designated as the SAP Deployment Leads to oversee and manage the deployment effort moving forward. A role description for the Deployment Lead is contained in *Appendix D*.

5.1 High-Level Overview

The High-level overview will provide its audience with: 1) an awareness and understanding of Solution Acquisition Planning as a key process area 2) specific SAP objectives and benefits 3) where SAP integrates into the Solution Lifecycle 4) what tools are associated with SAP. This overview session will serve as a prerequisite before members of an acquisition project team receive the individual coaching session detailing how to use the SAP tools.

One of two versions of the High-level overview may be presented to a specific audience, based upon the discretion of the session facilitator. The first option lasts approximately 90-minutes and is a basic presentation-style overview. The second option is the identical presentation with a 15-30 minute demo/example walkthru of the Estimating Worksheet and IT Cost Estimating Tool. This approach provides the participants with the benefit of “hands-on” practice in utilizing the tool in a scenario-based, risk-free environment.

5.2 Coaching Sessions

The coaching sessions should be held based on a project’s point-of-need. This session should be conducted before a team begins a Solution Acquisition. Prior to attending a coaching session, team members involved in the planning activities must have participated in a High-level overview session.

The coaching sessions will be organized and conducted by the SAP Deployment Lead(s). Participants will be walked through a sample, completed scenario (based on the Learning Management System content). Participants will then have the opportunity to begin to populate the tools with their individual project information, with the assistance of the Deployment Lead or designated coach.

6.0 Impacts, Results and Outcomes

6.1 What we are trying to accomplish...

6.1.1 Compliance with Federal Legislation

Adherence to SAP process and tools, resulting in a well-documented Acquisition activity, enables SFA to more efficiently achieve clean GAO and IG audits as well as comply with the following legislation:

- GPRA: The Acquisition process begins when SFA identifies a performance/business need. Decisions on how to fulfill this need follow legislation the Government Performance Results Act (GPRA).
- Legislative reform of the acquisition process has supplemented IT procurements governed by the Brooks Act (The primary goal of the Brooks act is to ensure IT acquisitions are conducted in a manner that achieves full and open competition).
 - Capital planning, investment review, and performance measurement are integral to the acquisition life cycle and governed by ITMRA (Information Technology Reform Act) of the Clinger-Cohen Act.
- Acquisition cost, schedule goals, and performance fall under the FASA (Federal Acquisition Streamlining Act) legislation.

6.1.2 Expected Benefits

After the deployment of SAP, SFA resources and Modernization TO managers will have been introduced to the SAP process and tools resulting in a well developed and documented Acquisition Strategy. For resources previously unfamiliar with SAP, a repeatable planning effort will facilitate the planning activities and provide project manager a tool to oversee and measure progress against. Through the continual documentation of planning efforts, benchmarks will be established over time further building best practice planning estimates within SFA.

6.2 Impacts

The impact if the SAP Deployment effort is a proven Solution Acquisition Planning process that may be fully deployed to SFA at the appropriate time.

6.3 Results

As a result of the SAP Deployment effort, a deployment process and delivery mechanism have been identified for the socialization and institutionalization of Solution Acquisition Planning within SFA. The SAP process, approach, tools and training content has been tested and validated through the pilot activities associated with this deployment effort and detailed in this Deployment Report.

Moving forward SFA resources will assume responsibility for the SAP deployment effort. Once the knowledge transfer is complete the SFA Deployment Lead(s) will serve as process champions and subject matter expert. Based upon the need, additional resources may be trained to act as coaches for the SAP topic.

6.4 Desired Outcomes

The minimal desired outcome expected from deploying SAP to the SFA organization is the utilization of the process and tools. SAP provides streamlined, predictable, repeatable, measurable processes that help SFA meet Performance Objectives. Using the appropriate processes, introduced through deployment, will enable higher quality work, improved compliance with government standards, improved understanding of employee responsibilities (Increased Employee and Customer Satisfaction), and repeatable processes that result in lower cost of acquisition efforts (Lower Unit Costs).

6.5 Measure Effectiveness

Ultimately, the strategic impact of CMM (and more specifically SAP) supports the realization of the 3 PBO Objectives. In reality, these goals are too general and widely based to directly link SAP success to; therefore, intermittent tools and measures must be applied. Transitioning from overall measures to those more specific and applicable to SAP, the Performance Plan will indicate the results of SFA initiatives and the performance and progress against expected, predetermined results. This information is obtained through individual team scorecards and Modernization Delivery Excellence.

To measure the effectiveness of the SAP process and tools deployment and acceptance, measures applicable to SAP should be added to the individual team scorecards. As adherence to these steps increases and scorecards show these measures as “green” it should indicate that the recommended tools have been put into place. The result of following the recommended process should result in a streamlined yet increasingly accurate planning effort enabling milestones and capabilities to be delivered on schedule.

Measures that may be applied to a scorecard can be based upon the Quality Assurance (QA) Review and may include:

- Solution Acquisition Plan completed
- Project’s activities been estimated for time and effort
- Executive Sponsor/peer reviews of Solution Acquisition Plan completed as indicated
- Solution Acquisition Plan has been baselined and a change control process implemented
- How is the project performing against the initial, benchmarked estimates?
- Individual Milestones are delivered on time and within budget
- QA process reviews completed and corrective actions taken
- An initial QA Process Checklist has been developed (Appendix F and will be included in QA Process Guide)

7.0 Critical Success Factors

Critical success factors are the conditions that can foster successful adoption of the SLC Process. The following are some of the critical success factors:

- Consistent presentation of message (objectives, benefits etc...)
- Follow-up on attendance for high-level overview to maximize attendance
- Provide survey (enclosed as *Appendix E*) for capturing feedback on the high level overview, for incorporation in and improvement of deployment material
- Apply improvement suggestions as appropriate
- Provide overview briefing to Management Council, at a predetermined checkpoint, to update on progress of deployment
- Develop a schedule of high level training and focused coaching sessions based on both current and future needs of users and monitor progress
- Determine the appropriate control mechanisms for the deployment documentation (content must be updated as dependencies such as acquisition process, investment review process and business case may change)

8.0 Open Points/Potential Risks

- Knowledge transfer not complete/Lack of assigned Deployment Lead(s)
 - Corrective Action – work with Connie Davis and Cheryl Queen to determine appropriate candidates
- Inconsistent Agreement upon business case template
 - Corrective Action - All options must be collected, benefits and gaps of each template highlighted and a final decision should be made on the part of the Decision Support Group
- Continual update of Deployment material as the related tools, templates and processes are modified
 - Corrective Action – Institution of an appropriate change control process
- Performance /Shared-in Savings contracting must be further reviewed, and modifications made, with regard to the Solution Acquisition Planning Process and Tools